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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,268	10/22/2001	Mark Kevitt Debe	52955US011	5103

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EXAMINER	
RUTHKOSKY, MARK	
ART UNIT	PAPER NUMBER
1794	

NOTIFICATION DATE	DELIVERY MODE
07/24/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LegalUSDocketing@mmm.com
LegalDocketing@mmm.com

Office Action Summary	Application No.	Applicant(s)	
	10/014,268	DEBE, MARK KEVITT	
	Examiner	Art Unit	
	Mark Ruthkosky	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *31-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *31-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Reopening of Examination

Prosecution of this application is being reopened after a decision by the Board of Patent Appeals and Interferences. The decision states that the claims require appropriate consideration under 35 U.S.C. 112, sixth paragraph. Therefore, the claims have been considered in this regard.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 31-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Pedrick (GB 1,439,440.)

The instant claims are to an apparatus for delivering gas at a controlled rate comprising

a) an article comprising at least one containment means comprising pressurized gas-filled microbubbles, said gas being releasable on demand,

b) a means for causing release of said gas from said microbubbles by fracturing, and

c) a feedback and control means for releasing gas to an electrochemical power device at a controlled rate determined by a load.

Pedrick (GB 1,439,440) teaches an apparatus for delivering gas at a controlled rate comprising an article with at least one containment means comprising pressurized gas-filled

microbubbles, said gas being releasable on demand (claims 1-4), a means for causing release of said gas from said microbubbles by fracturing (page 3, col. 1), and a feedback and control means for releasing gas to an electrochemical power device at a controlled rate determined by a load (page 2, col. 1, lines 35-end; col. 2, line 90-end; page 3, lines 1-20, claims 1-4.) A fracture release mechanism is taught for releasing the fuel. Engines and vehicles are well known to inherently include a throttle that releases fuel in response to the need required by the engine.

Independent claim 31 describes an apparatus for delivering gas at a controlled rate comprising a "means for causing release of said gas.., by fracturing"; and a "feedback and control means for releasing gas to an electrochemical power device at a controlled rate determined by a load. The phrase, "for releasing gas to an electrochemical power device at a controlled rate determined by a load" is an intended use of the feedback and control means. In the reference, the means for causing release of said gas by fracturing is taught to be a piston, a member moveable with the piston or pressure in the space above the piston (claim 1.) The means has the structure of a roller (see figures.) The feedback and control means for releasing gas to an electrochemical power device at a controlled rate determined by a load is taught to be a fracture release mechanism and a motor controller (page 2, col. 1, lines 35-end; col. 2, line 90-end; page 3, lines 1-20, claims 1-4.) These equivalent structures are noted in instant claim 32. A fracture release mechanism is taught for releasing the fuel. Further, it has been stated that engines and vehicles are well known to inherently include a throttle that releases fuel in response to the need required by the engine. Claim 32 is not given means plus function consideration under 35 U.S.C. 112, 6th paragraph because the means has been identified by structure. Thus, the claims are anticipated.

Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monsler et al. (Fuel Cells for Transportation TOPTEC, as submitted by applicant in their disclosure of prior art) in view of Ishimaru et al (US 5,432,710) OR Scheffler et al. (US 5,009,967.)

Monsler et al. teaches an apparatus for delivering gas at a controlled rate comprising an article with at least one containment means comprising pressurized gas-filled microbubbles, said gas being releasable on demand, a means for causing release of said gas from said microbubbles by fracturing (pages 4-5.) The reference does not teach a feedback and control means for releasing gas to an electrochemical power device at a controlled rate determined by a load.

Ishimaru et al (US 5,432,710, see figure 1, the abstract and the claims) and Scheffler et al. (US 5,009,967, see claims 1-4) teach feedback and control means for releasing gas to an electrochemical power device at a controlled rate determined by a load. Various detectors and processors are noted. The controllers supply a fuel to a load in an efficient manner.

Independent claim 31 describes an apparatus for delivering gas at a controlled rate comprising a "means for causing release of said gas.., by fracturing"; and a "feedback and control means for releasing gas to an electrochemical power device at a controlled rate determined by a load."

The "means for causing release of said gas.., by fracturing" is taught in Monsler, which teaches the release of hydrogen gas from the microspheres by fracturing. The gas microspheres are heated to cause porous fracturing which reads upon the instant claims. The glass becomes porous at 150- 200 °C to release hydrogen (see page 12 of Monsler.) The spheres become porous, and thus fractured, at high temperatures. On page 7 of the instant specification, thermal fracturing is taught as a means for fracturing the microspheres of the instant invention.

The "feedback and control means for releasing gas to an electrochemical power device at a controlled rate determined by a load" is taught in Scheffler et al. (US 5,009,967, see claims 1-4), which teaches feedback and control means for releasing gas to an electrochemical power device at a controlled rate determined by a load. Various detectors and processors are noted. The controllers supply a fuel to a load in an efficient manner. Feedback and control means are disclosed in claim 32. Claim 32 is not given means plus function consideration under 35 U.S.C. 112, 6th paragraph because the means have been identified by structure.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a feedback and control means as taught by Ishimaru and Scheffler for releasing gas to an electrochemical power device at a controlled rate determined by a load in order to supply a fuel to a load in an efficient manner, so as not to undersupply the load or to oversupply the load and waste fuel not used by the load. The artesian would have found the claimed invention to be obvious in light of the teachings of the references.

Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 571-272-1291. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:30.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free.)

/Mark Ruthkosky/

Primary Examiner, Art Unit 1795

/Gregory L Mills/

Acting Director of Technology Center 1700